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November 29, 1994

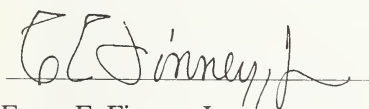
**Agricultural Research Service
United States Department of Agriculture**

The Agricultural Research Service Science Hall of Fame

The ARS Science Hall of Fame was inaugurated in 1986. We determined that each succeeding year, one or more present or former scientists with the Agricultural Research Service could be selected, subject to the following criteria:

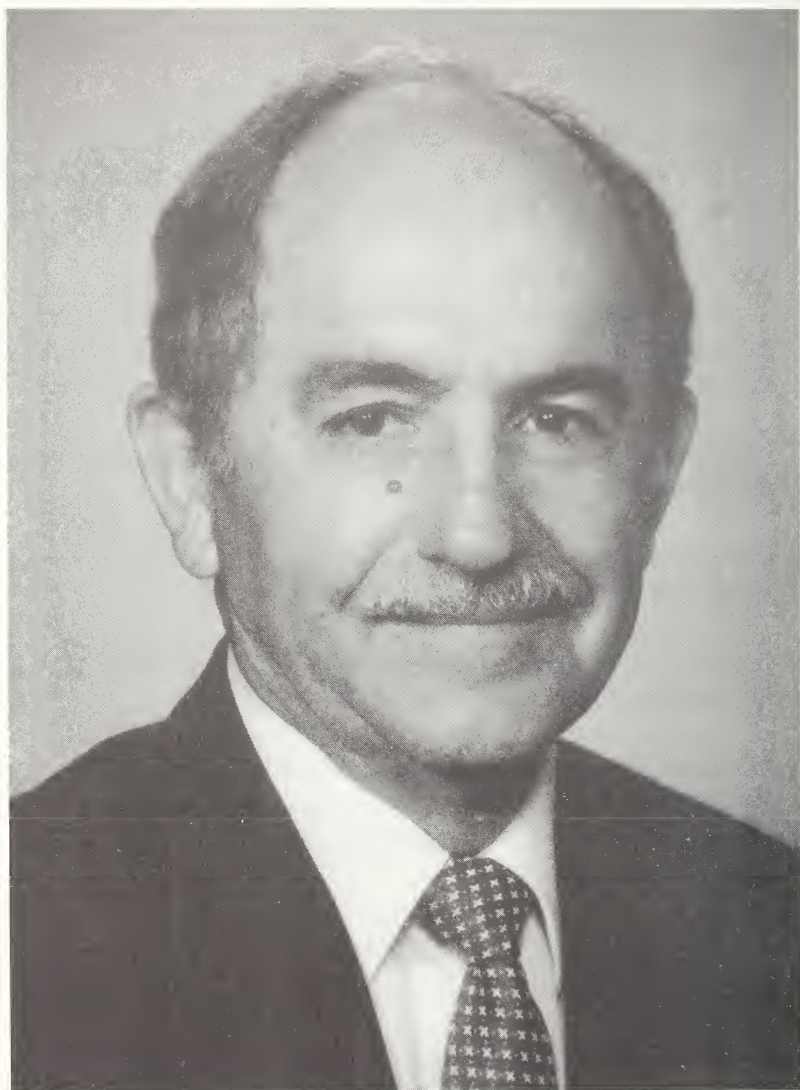
- The selectee made a major impact on agricultural research, either by the solution to a significant agricultural problem through research or by providing outstanding leadership that significantly advanced agricultural research.
- The selectee is a person whose accomplishments are still recognized by the agricultural research community.
- The selectee's character and record of achievement is worthy of emulation by younger agricultural scientists.
- The selectee's achievements must be or have been nationally and/or internationally recognized by peers in the scientific community.

Today we honor several outstanding scientists by inducting them into the Science Hall of Fame. A plaque citing the achievements of each will be on permanent display in the ARS National Visitor Center at the Beltsville Agricultural Research Center.

A handwritten signature in dark ink, reading "Essex E. Finney, Jr.", with a stylized flourish at the end.

Essex E. Finney, Jr.
Acting Administrator

November 29, 1994



Charles N. Bollich

Research Leader (retired)

Rice Research Unit

Beaumont Texas

In recognition of superlative accomplishments in rice breeding and genetics and their consequent benefits to American agriculture.

During the course of a productive research career of over 40 years, Dr. Bollich has led in the development of rice cultivars that have become driving forces in the United States and a number of Central and South American countries. Recognized worldwide for their superior quality, these cultivars have been instrumental in the development of new export markets, allowing the United States to maintain its position as one of the world's leading rice exporters.

Dr. Bollich led a team that, from 1968 to 1990, developed 16 cultivars. These include the renowned "Lemont" cultivar, a leading semidwarf cultivar released by Dr. Bollich in 1983. "Lemont," because of its superior lodging resistance and high grain quality, is used in breeding programs throughout the world. Along with its sister, "Gulfmont," "Lemont" is now the leading variety grown in Texas, Mississippi, and Louisiana.

Dr. Bollich and coworkers determined that light has a direct influence on the amount of nitrogen that can be used for maximum grain production, and determined that the planting date for particular cultivars should be such that maximum light will occur at heading time to produce maximum yields.

He has conducted extensive long-term studies of the relationship between plant type and yield, as well as source-sink relationships in the Gulf Coast environment. Among his many awards are the Agronomic Achievement Award of the American Society of Agronomy and the Rice Industry Meritorious Service Award of the Rice Foundation.

Since his retirement from ARS in 1991, Dr. Bollich has maintained and diversified his professional activities. He remains a collaborator with ARS, advising and consulting with the Rice Research Unit where he is active in their "Econo-Rice" program of variety development, quality improvement, utilization, and marketing.



Chester G. McWhorter

Research Leader

Application Technology Research Unit

Stoneville, Mississippi

For outstanding contributions to American agriculture through basic and applied research that has resulted in improved weed management technology that has increased yields and reduced the cost of production.

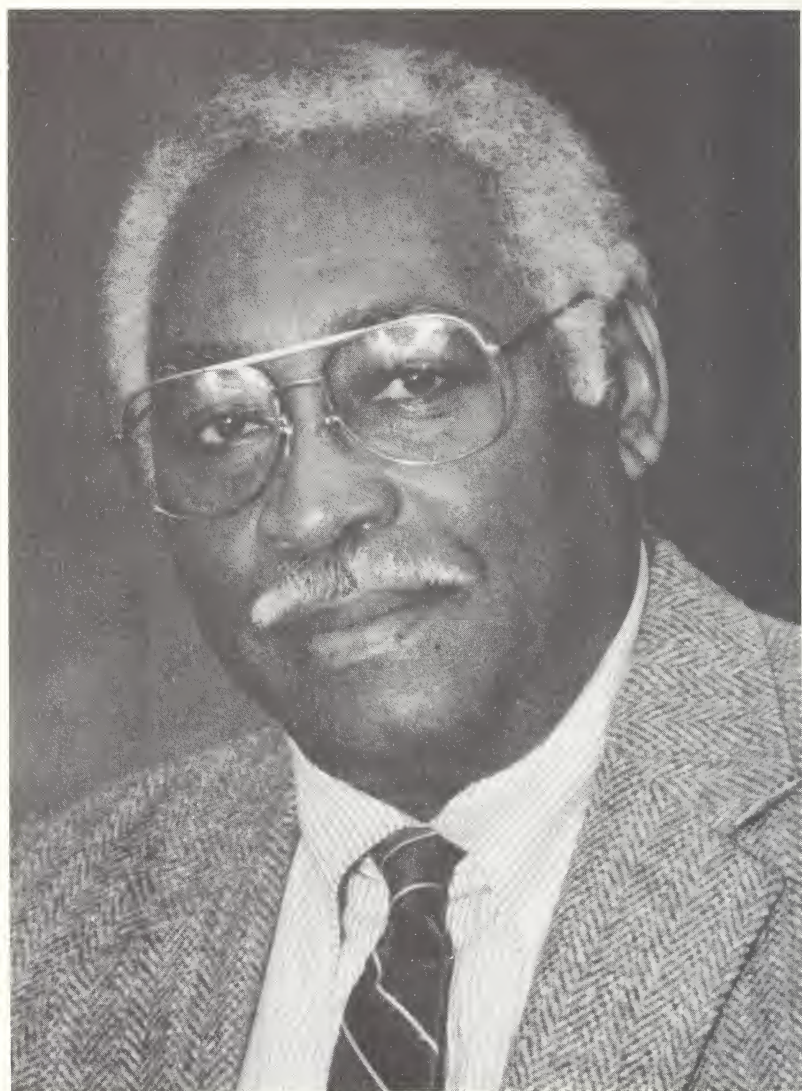
Dr. McWhorter's name is synonymous with weed science throughout the world. He is also known as the man who has successfully spanned the gap between basic and applied research in this area. The improved weed control technology that he generated is now used on more than 60 million acres of agronomic crops annually in the United States.

His pioneering research led to the discovery that surfactants and other adjuvants increase herbicide activity and improve selectivity and safety. He discovered that a group of herbicides known as dinitroanilines selectively control johnsongrass from both rhizomes and seed in soybeans when used in a specific regimen. He also discovered that the postemergence activity of another class of herbicides, the s-triazines, was greatly increased when applied in emulsions of paraffinic oil in water. This practice, which reduces herbicide use rates, is widely used on millions of acres annually.

He invented several innovative herbicide application devices and techniques, including the recirculating sprayer, application of herbicides in foam and wax bars, subsurface application of herbicides in soil with a subsurface blade, and soil injection of herbicides.

Dr. McWhorter is recognized internationally as the foremost authority on johnsongrass biology, ecology, taxonomy, physiology, and control. The technology issuing from his research is widely used as a model by extension agents, industry, other scientists, and producers to reduce losses caused by weeds, to control costs of weed control, and to aid in conducting national market surveys. He has shared his research results through more than 200 publications.

A lengthy list of awards is capped by USDA's Distinguished Research Scientist of the Year 1989, a 1990 Research Award from the Southern Weed Science Society, and Research Scientist of the Year 1991 for Outstanding Contributions to Delta Agriculture, by the Delta Council.



Malcolm J. Thompson

Research Chemist

Beltsville, Maryland

For career research contributions in the field of insect and plant steroid biochemistry.

Malcolm Thompson is internationally recognized for contributions to the fields of insect and plant biochemistry.

In 1962, when Dr. Thompson joined ARS from the National Institutes of Health, he had already made key contributions of biomedical significance in the field of steroid chemistry. At ARS, he made pioneering discoveries with ecdysteroids, the group of steroid hormones that regulate molting in insects and other invertebrates. He developed analytical techniques for separating and detecting natural products, marking him as a leader in the isolation and identification of ecdysteroids. His research on the biosynthesis of ecdysteroids from cholesterol and their subsequent metabolism has promoted a more complete understanding of the critical process of molting.

This work led him to synthesize a series of highly active compounds that inhibit growth and development in immature insects. They proved effective as control agents for a wide variety of agricultural pests—potent nematicides, antimicrobial agents effective against cattle mastitis, and control agents against the scabies mite of livestock. He was also instrumental in identifying methyl epoxyfarnesoate, the predominant juvenile hormone of insects. Based on Dr. Thompson's chemistry, an entirely new generation of environmentally-sound pesticides was developed.

His contributions to plant biochemistry include the first successful synthesis of highly active analogs of brassinolide, enabling other researchers to show that this new hormone hastens plant maturation and increases yield. Other accomplishments include the first isolation, identification, and synthesis of feeding stimulants for the cotton boll weevil.

The author or coauthor of almost 200 publications, Malcolm Thompson has made a lifelong commitment to team research, as evidenced by collaborative publications with 52 scientists in a wide variety of disciplines. He received the Hillebrand Prize from the Chemical Society of Washington in 1987. Other awards include two USDA Superior Service Unit Awards. He was chosen ARS Scientist of the Year 1983 for the Northeast Region.

ARS Science Hall of Fame

1986

Edward F. Knipling

For pioneering research and leadership in development of the sterile insect technique, which led to the eradication of the screw-worm, and of other technologies to suppress and manage insect pests.

1987

Howard L. Bachrach

For pioneering research on the molecular biology of foot-and-mouth disease that led to development of the world's first effective subunit vaccine for any disease of animals or humans through the use of gene splicing.

Myron K. Brakke

For consistent, career-long valuable contributions to the science of virology, particularly plant virology.

Glenn W. Burton

For outstanding achievements in forage and turf science, which have had extraordinary effects on the forage-based cattle industry, the turf industry, and agriculture worldwide.

Wilson A. Reeves

For outstanding research and leadership in the field of textile chemical finishing that has significantly benefited agriculture and consumers.

Ernest R. Sears

For pioneering work in wheat genetics and for discoveries on chromosomal mechanisms that established standards in animal, plant, and human genetics.

Orville A. Vogel

For development of the first useful semidwarf wheats and of innovative production systems that made the Pacific Northwest a major source of soft white wheat, inspired similar research efforts throughout the world, and sparked the Green Revolution.

Cecil H. Wadleigh

For elucidating the mechanisms through which crops respond to salinity and water stress and for inspired planning and leadership that enabled and motivated those who worked with him to expand and make use of knowledge of soils, water, and air and their interactions with plants.

1988

Francis E. Clark

For outstanding research leading to greater understanding of soil, plant, and microbial interactions and of nutrient cycling in terrestrial ecosystems.

Edgar E. Hartwig

For research in soybean breeding and genetics that has been a major factor in soybeans becoming the second most valuable U.S. crop and particularly for developing cultivars that thrive in the South.

Ralph E. Hodgson

For significant contributions to the knowledge of ruminant nutrition and for visionary leadership, both domestic and international, in the animal industries.

Hamish N. Munro

For career-long contributions to the science of nutrition, particularly on the relationship of dietary protein and iron to the health of the elderly, and for promotion of studies on aging.

Jose Vicente-Chandler

For research leading to new and greatly improved production systems for beef, milk, coffee, plantains, and rice for Puerto Rico and Caribbean countries.

1989

Douglas R. Dewey

For world leadership in genetics and taxonomy of the Triticeae tribe of grasses and for development of the cytogenetic basis for creating new grass hybrids.

Theodor O. Diener

For conceptualizing and discovering viroids, for leading research on viroid detection and control, and for inspiring new approaches in the search for causes of several serious diseases affecting plants, livestock, and humans.

Karl H. Norris

For developing principles and instruments using the electromagnetic wave spectrum to make rapid nondestructive measurements for evaluating quality of agricultural products.

John F. Sullivan

For engineering contributions to the food-processing and preservation industries, including development of instant potato flakes and of batch and continuous explosion puffing.

1990**Theodore C. Byerly**

For extraordinary contributions as a scientist, research leader, and administrator to the success of agricultural research programs and advances in U.S. and world agriculture.

Gordon E. Dickerson

For research contributions widely used by breeders to increase production efficiency of cattle, sheep, swine, and poultry.

Robert W. Holley

For isolation and characterization, including the first nucleotide sequence, of transfer ribonucleic acid (tRNA).

Virgil A. Johnson

For outstanding contributions to development of superior bread wheat cultivars and of improved wheat germplasm and for vigorous promotion of national and international cooperation among wheat breeders.

George F. Sprague

For outstanding contributions to effective methods of hybrid corn breeding and germplasm improvement.

1991

John H. Weinberger 

For outstanding lifelong contributions in development of fruit varieties and fruit breeding technology.

Walter H. Wischmeier

For developing the Universal Soil Loss Equation, which has been widely used for three decades worldwide in conservation and management of our natural resources.

1992

Raymond C. Bushland

For pioneering research leading to screwworm eradication by the sterile insect technique and for research leading to control of typhus vectors.

Lyman B. Crittenden

For significant contributions to retroviral genetics, transgenic animal development, and genome mapping in poultry.

Arnal R. Hallauer

For increasing understanding and use of quantitative genetics in plant breeding, which has led to development of many superior corn hybrids worldwide.

1993

John R. Gorham

For scientific leadership and studies that have resulted in solutions of disease control problems and have advanced basic knowledge of viral and genetic diseases in humans and animals.

Sterling B. Hendricks (posthumous award)

For significant contributions as a chemist, physicist, mathematician, plant physiologist, geologist, and mineralogist.

Clair E. Terrill

For scientific contributions and worldwide leadership in sheep production research.

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